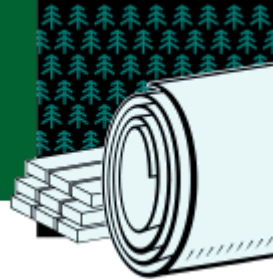


# FOREST PRODUCTS

## Project Fact Sheet



### REDUCING VOLATILE ORGANIC COMPOUND (VOC) PRESS EMISSIONS FROM ORIENTED STRANDBOARD (OSB) MANUFACTURING

#### BENEFITS

- Fundamental knowledge on the rate and volume of VOCs released from press vents under varying conditions
- Lowered production costs
- Increased industrial competitiveness
- Understanding of the relative importance of different types of pollutants on industrial operations and how to monitor them
- Reduced indoor air emissions for end-users in buildings where particle board and other wood products are used

#### VOC Emissions During Manufacture of Composite Board

Implementation of the Clean Air Act Amendments of 1990 is underway and the industry needs better emissions data and cost-effective methods to control regulated compounds. During the manufacture of lumber and composite board by the pulp and paper industry, the solid wood or wood flakes and fibers are dried and pressed at high temperatures. This sets up the right conditions for the release of various particulates and gases, including nitrous oxides, sulfur oxides, carbon monoxide, volatile organic compounds (VOCs), other hazardous air pollutants (HAPs) and toxic chemicals, and odors.

Once in the atmosphere, the VOCs, in particular, contribute to ground-level ozone formation and become an environmental issue in states east of the Mississippi River where 60 percent of the particle board is manufactured. Twenty percent of VOCs emitted into the air annually originate in particle board presses and 50 percent are generated by dryers. Modification of the entire pressing and drying process is needed to minimize air pollutants and eliminate the need for end-of-pipe controls. Removal of potential emissions from the final product will also benefit the public that uses them.

#### APPLICATIONS

The mill trials during the third year of the project will be full-scale, commercial trials in cooperation with the oriented strand board industry and in compliance with its regulations. A new processing method will reduce or minimize industrial air emissions and allow industry to meet present environmental standards.



Initial background studies on air emissions from an OSB plant in Michigan.



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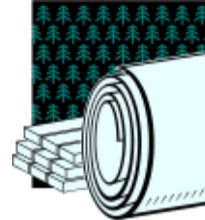
## PROJECT DESCRIPTION

**Goal:** Develop a new manufacturing process to reduce VOCs and HAPs from the press vents at the end of the production of oriented strand board.

Four primary tasks to be accomplished include determining which chemical additives minimize the formation of VOCs and HAPs and whether they affect board properties; determining the effect of resin systems on VOC and HAP formation in the presence of chemical additives; modifying the surface of the wood furnish with chemicals to enhance absorption of VOCs and/or HAPs to reduce their emission into the air; and determining the chemicals that react specifically with VOCs and HAPs and whether they affect board properties.

## PROGRESS & MILESTONES

- Preliminary work finished on characterizing, monitoring, and reducing VOCs emitted during the manufacture of strand board.
- The first two years of this three-year study will be devoted to laboratory and pilot studies.
- The three best systems developed during this phase will be tested in actual mill trials in the final year.



### PROJECT PARTNERS

The Institute of Wood Research,  
Michigan Technological University  
Houghton, MI

### FOR ADDITIONAL INFORMATION PLEASE CONTACT:

Merrill Smith  
Office of Industrial Technologies  
Phone: (202) 586-3646  
Fax: (202) 586-1658  
e-mail: [merrill.smith@ee.doe.gov](mailto:merrill.smith@ee.doe.gov)

Dr. Gary McGinnis  
Director, Institute of Wood Research  
Michigan Technological University  
Houghton, MI  
Phone: (906) 487-3188  
Fax: (906) 487-2915  
e-mail: [gdmcginn@mtu.edu](mailto:gdmcginn@mtu.edu)

Please send any comments,  
questions, or suggestions to  
[webmaster.oit@ee.doe.gov](mailto:webmaster.oit@ee.doe.gov)



Office of Industrial Technologies  
Energy Efficiency and Renewable Energy  
U.S. Department of Energy  
Washington, D.C. 20585

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